

**Translation**

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

|  |   |   |
|--|---|---|
| Applicant's or agent's file reference<br><b>71041JJJ55MP</b>                 | FOR FURTHER ACTION  | See Form PCT/IPEA/416                               |
| International application No.<br><b>PCT/FR2004/001009</b>                    | International filing date (day/month/year)<br><b>27.04.2004</b> | Priority date (day/month/year)<br><b>28.04.2003</b> |
| International Patent Classification (IPC) or national classification and IPC |   |   |
| Applicant<br><b>MESSIER-BUGATTI</b>  |   |   |

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| 1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.   |
| 2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.   |
| 3. This report is also accompanied by ANNEXES, comprising:<br>a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:<br><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).<br><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.<br>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions). |
| 4. This report contains indications relating to the following items:<br><input checked="" type="checkbox"/> Box No. I Basis of the report<br><input type="checkbox"/> Box No. II Priority<br><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability<br><input type="checkbox"/> Box No. IV Lack of unity of invention<br><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement<br><input type="checkbox"/> Box No. VI Certain documents cited<br><input type="checkbox"/> Box No. VII Certain defects in the international application<br><input type="checkbox"/> Box No. VIII Certain observations on the international application   |

|   |                                   |
|---|-----------------------------------|
| Date of submission of the demand        | Date of completion of this report |
| Name and mailing address of the IPEA/EP | Authorized officer                |
| Facsimile No.                           | Telephone No.                     |

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FR2004/001009

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
    - ☐ international search (Rule 12.3 and 23.1(b))
    - ☐ publication of the international application (Rule 12.4)
    - ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
  - ☐ the international application as originally filed/furnished
  - ☒ the description:
    - pages 1-22 \_\_\_\_\_ as originally filed/furnished
    - pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
    - pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
  - ☒ the claims:
    - nos. 1-12 \_\_\_\_\_ as originally filed/furnished
    - nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19
    - nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
    - nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
  - ☒ the drawings:
    - sheets 1/5-5/5 \_\_\_\_\_ as originally filed/furnished
    - sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
    - sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
  - ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
  - ☐ the description, pages \_\_\_\_\_
  - ☐ the claims, nos. \_\_\_\_\_
  - ☐ the drawings, sheets/figs \_\_\_\_\_
  - ☐ the sequence listing (*specify*): \_\_\_\_\_
  - ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
  - ☐ the description, pages \_\_\_\_\_
  - ☐ the claims, nos. \_\_\_\_\_
  - ☐ the drawings, sheets/figs \_\_\_\_\_
  - ☐ the sequence listing (*specify*): \_\_\_\_\_
  - ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FR2004/001009

| Box No. V   | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |      |     |
|---|---|------|-----|
| 1. Statement  |   |      |     |
| Novelty (N)   | Claims  | 1-12 | YES |
|   | Claims  |      | NO  |
| Inventive step (IS)   | Claims  |      | YES |
|   | Claims  | 1-12 | NO  |
| Industrial applicability (IA)   | Claims  | 1-12 | YES |
|   | Claims  |      | NO  |
| 2. Citations and explanations (Rule 70.7)   |   |      |     |
| 1. In the present report, reference is made to the following documents:   |   |      |     |
| D1: US 6 001 419 A (DELPERIER BERNARD ET AL) 14 December 1999 (1999-12-14)  |   |      |     |
| D2: GLASIER G F ET AL: "Formation of pyrolytic carbon during the pyrolysis of ethane at high conversions" CARBON, vol. 39, no. 1, January 2001 (2001-01), pages 15-23, XP004319819 ISSN: 0008-6223  |   |      |     |
| 2. D1 (see claims and examples), which is considered to be the prior art closest to the subject matter of claim 1, describes a chemical infiltration method for densifying porous substrates using carbon. Parameters (for example, pressure or temperature) are varied according to a predetermined model so as to control the microstructure and reduce the total duration of the method. |   |      |     |
| 2.1 Consequently, the subject matter of claim 1 differs from the teaching of D1 in that the content of a compound selected from among allene, propyne and benzene present in the flue gases is measured and, depending on the measured content, the method is   |   |      |     |

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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|           |   |
|-----------|---|
| Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
|-----------|---|

controlled by adjusting the pressure or the temperature, for example.

- 2.2 The problem that the present invention is intended to solve can be considered to be that of providing a method controlled in real time so as to optimise the infiltration parameters.

- 2.3 The solution proposed in claim 1 of the present application is not considered inventive (PCT Article 33(3)) for the following reasons:

It is known from D2 (see "2. Experimental": 3.2 "Rates as a function of concentration" and figure 7) that the benzene content of the flue gases in pyrolytic carbon deposition methods is a good indication of carbon deposit kinetics. It is obvious for a person skilled in the art to use the relationship between the benzene content and the kinetics to arrive at a method according to D1 controlled in real time.

Consequently, a person skilled in the art seeking to solve the stated problem would combine the features described in D1 and D2, without exercising inventive skill. The solution proposed in independent claim 1 cannot therefore be considered to involve an inventive step (PCT Article 33(3)).

- 2.4 Dependent claims 2 to 12 contain no features which, when combined with the features of any one of the claims to which they refer, meet the PCT requirements of novelty and inventive step (PCT Article 33(2) and (3)).

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